

**ABSTRACT OF THE DISCLOSURE**

Compositions comprising first and second oligomers are provided wherein at least a portion of the first oligomer is capable of hybridizing with at least a portion of the second oligomer, at least a portion of the first oligomer is complementary to and capable of hybridizing to a selected target nucleic acid, and at least one of the first or second oligomers includes a modified sugar and/or backbone modification. In some embodiments the modification is a peptide nucleic acid, a peptide nucleic acid mimic, a morpholino nucleic acid, hexose sugar with amide linkage, cyclohexenyl nucleic acid (CeNA), or an acyclic backbone moiety. Oligomer/protein compositions are also provided comprising an oligomer complementary to and capable of hybridizing to a selected target nucleic acid and at least one protein comprising at least a portion of an RNA-induced silencing complex (RISC), wherein at least one nucleotide of the oligomer has a modified sugar and/or backbone modification.